

# Hiroki WATANABE

## Keio University

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A computer science researcher with research interests in network architecture, protocol signaling, protocol stack, and distributed system on them such as MEC, IoT, and Fog Computing. Experience in developing a session layer protocol in userland providing applications with rich communication paths (multipath, DTN, middlemox, and etc.) in C language and in developing a set of middleware for distributed edge cloud computing in C language and Go.

## EDUCATION

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APR. 2018 – *Current*    Ph.D student in ENGINEERING, **Keio University**, Japan

MAR. 2018    M.E. degree in ENGINEERING  
from **Keio University**, Japan (GPA: 3.67/4)  
Thesis: “**Design and Implementation of A Communication Mechanism  
for Application-level Service Chaining**” | Advisor: Fumio TERAOKA

MAR. 2016    B.E. degree in INFORMATION AND COMPUTER SCIENCE  
from **Keio University**, Japan (GPA: 3.81/4)  
Thesis: “**A Prototype Implementation of A Session Layer on New  
Generation Network Architecture: ZNA**” | Advisor: Fumio TERAOKA

## EMPLOYMENT

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APR. 2019 – *Current*    Researcher (part-time) at Grad. School of Science and Technology, Keio University  
Committing to fundamental technologies on Beyond-5G

MAR. 2017 – *Mar. 2019*    Research Assistant at IJ Innovation Institute  
Developing Software around LKL and MPTCP

AUG. 2016 – SEP. 2016    Internship at Yahoo! Japan  
Developing Cassandra at Data Platform Department

## LANGUAGES

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JAPANESE: Native Speaker  
ENGLISH: Good Command  
GERMAN: Basic Communication

## PROGRAMMING SKILLS

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Application development using C/Go  
Kubernetes and Docker  
Network operation (routers, L2/L3 switches, servers, etc.)

## PUBLICATIONS

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### Journal Articles

1. Hiroki Watanabe, Takao Kondo, Kunitake Kaneko, Fumio Teraoka, **"Inserting Layer-5 to Provide Applications with Richer Functions through Common API,"** *IEICE Transactions on Communications*, Vol.E101-B, No.9, pp.1967-1981.

### Proceedings

1. K. Hayashi, H. Watanabe, T. Kondo, and F. Teraoka, **"LiON: A L3 Protocol Agnostic Experimental Network Construction Tool Based on Infrastructure as Code"**, *The Sixth IEEE International Conference on Software Defined Systems (SDS-2019)*, June. 2019.
2. H. Watanabe, T. Kondo, K. Kaneko and F. Teraoka, **"Separating Communication Policies and Mechanisms to Make Protocol Layering Clearer,"** *2017 26th International Conference on Computer Communication and Networks (ICCCN)*, Vancouver, BC, 2017, pp. 1-9. (Acceptance Rate: 27%)

### Workshops

1. Hiroki Watanabe, Collaborator: Takao Kondo, Supervisor: Fumio Teraoka **"Application-Level Service Chaining for General In-Network Computation,"** *2019 13th EuroSys Doctoral Workshop (EuroDW)*, Dresden, Germany, 2019. Mar.

## AWARDS

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1. **"Student Incentive Award,"** IEICE-IA, March 2018.
2. **"Student Incentive Award,"** IEICE-IA, March 2016.

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